



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#7 1/2 /Supp  
Response

First Named

Inventor : Baowei KANG et al.

Appln. No. : 10/017,734

Filed : December 7, 2001

Title : POWER SEMICONDUCTOR SWITCHING  
DEVICES WITH LOW POWER LOSS  
AND METHOD FOR FABRICATING THE  
SAME

Docket No. : B784.312-1

Group Art Unit: 2826

Examiner: M.L. Tran

TECHNOLOGY CENTER 2800  
JAN 24 2003

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**SUBSTITUTE RESPONSE**

Box Non-Fee Amendment

**SENT VIA EXPRESS MAIL**

Assistant Commissioner for Patents

Express Mail No.: EV 168053145 US

Sir:

This is in substitution of the Response filed December 23, 2002, to correct several typographical errors from the Remarks section contained therein, primarily associated with replacing "n+" with "n-" in certain locations. This Substitute Response is Responsive to the Office Action mailed on September 25, 2002.

**IN THE CLAIMS**

The presently pending claims 1-7 are provided for the Examiner's ease of reference as follows:

1. A low-power-loss power semiconductor switching device comprising an n-type base, a backside p<sup>+</sup> emitter and general frontside structure including a cathode and a gate, wherein said switching device includes a combination of an ultra thin and lightly-doped backside p<sup>+</sup> emitter formed by ion implanting and a nonuniformly doped n-type base which contains a residual layer of a priorly-diffused n<sup>+</sup> layer on one side of the device.